MADE IN THE USA

Display-Series Two-Way Base Station

RITRON® WIRELESS SOLUTIONS

RUGGED, PROFESSIONAL TWO-WAY BASE RADIOS

ALWAYS THERE...ALWAYS READY...ALWAYS ON! SM

- Up to 10 Channel Capability
- 12 VDC or Wall Outlet 120 VAC Operation
- Weather Channel Feature (VHF only)
- Emergency Weather Alert Feature (VHF only)
- Easy-to-Hear High Audio Output
- Call Tone
- Built-in Quiet Call® and Digital Quiet Call® Interference Eliminator
- "Z" Button - Programmable Soft Key
- 2-Tone Paging Encode and Decode
- DTMF ANI Encoding
- Channel Scan
- 2 Watts of Power

Built-in NOAA WEATHER RADIO Feature

New **DISPLAY SERIES**

OWNER'S MANUAL

ACCESSORIES

JBSK-12
12-Volt Adapter Kit

RHD-6X
Behind-the-ear Earset

JBS-MMK
Mobile Mounting Kit

RAM-1545
Magnet-mounted, Dual-band Antenna

RSP-5
5-Watt External Speaker

RM-7
Hand Microphone

OPTIONAL / REPLACEMENT ACCESSORIES:

TO ORDER CALL 800-USA-1-USA

AFB-1545 .... Molded Flex, Dual-band Replacement Antenna
RAM-1545 ... Magnet-mounted, Dual-band Antenna w/ BNC

RPS-1A ..... Replacement 110 VAC Power Supply
CCL-M ..... 12 VDC, Cigarette Lighter Adaptor
JBSK-12 ..... 12 VDC, Adaptor Kit

REP-2 ..... Low Profile Earphone
RHD-1X ..... Single Ear Headset
RHD-4X ..... Dual Ear Headset
RHD-5X ..... Lightweight Over-the-ear Earset /w In-line PTT
RHD-6X ..... Lightweight Behind-the-head Earset w/ In-line PTT

RSM-3X ..... Remote Speaker Microphone
RM-7 ..... Hand Microphone & Hang-up Bracket

RSP-5 ..... External Speaker w/5 Watt Audio Capability
JBS-MMK ... Mobile Mounting Kit
(Does not include screws to mount bracket to wall or vehicle)

Call RITRON for a complete listing.

The NEW Display Series model base radio contains updated programming features, and programs differently than other Ritron Base Stations. These radios provide more channels, allow you to change channel programming contents individually, and also allow you to delete one or more channels, and add it back in, if needed.

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INSPECTION

Make sure the package includes:

- "Display Series" base radio
- Antenna
- RPS-1A Wall Mounted Power Supply
- Owner's Manual

Examine the equipment immediately after delivery and report any damage to your shipping company.

INTRODUCTION

THANK YOU FOR CHOOSING RITRON

Congratulations on your purchase of the Display Series base radio. Your new radio is the result of Ritron's 25 years history of designing, manufacturing, and supplying reliable, professional wireless communication products. Ritron wireless products will improve the operation, safety, and profitability of any organization by providing instant voice communications between employees throughout the workplace.

"DISPLAY SERIES" MODEL NUMBERS

VHF MODELS: JOBCOM & PATRIOT

JBS-146D ..... (Jobcom) ... (2-Watt, 10 Channel)
PBS-146D ..... (Patriot) ..... (2-Watt, 10 Channel)

UHF MODELS: JOBCOM & PATRIOT

JBS-446D ..... (Jobcom) ... (2-Watt, 10 Channel)
PBS-446D ..... (Patriot) ..... (2-Watt, 10 Channel)

The model number located on the back of the radio case indicates its operating band.

VHF radios are designed to operate on up to ten channels within the 12 MHz band between factory standard 150 and 162 MHz.

UHF radios are designed to operate on up to ten channels within the 20 MHz band between factory standard 450 and 470 MHz.

BASIC FEATURES

This manual covers Ritron "Display Series" base radios.

These radios are rugged, programmable two-way desktop base stations designed to operate in a professional FM communications band (VHF or UHF business available). Each radio is equipped with these features:

- **Push-button operating controls.** The Push-To-Talk (PTT), Channel, On/ Volume Up, Volume Down/ Off and the special feature "Z" button controls are conveniently located on the face of the radio.
- **Channel display.** The LED display will show the current operating channel, and contains a transmit/busy lamp. The display is also used to indicate volume level and paging decode status on radios programmed for 2-tone paging operation.
- **10-channel capability.** Up to 10 channels can be programmed to contain a unique set of operating frequencies and options.
- **QC (Quiet Call) and DQC (Digital Quiet Call)intereference eliminator codes.** Each channel can be programmed from a list of 51 QC sub-audible or 83 DQC digital privacy codes.
- **Channel scanning.** Channel Scan allows scanning of all channels programmed into the radio, and can be turned On and Off through Field programming. The scan channel has many features, including Priority Scanning and Busy Channel Blocking.

Features available through PC programming include:

- **Special Feature "Z' button.** The "Z" button can be PC programmed soft key for many unique functions such as Scan, Weather Channel, send DTMF ANI, send 2-tone page, Monitor, or Call Tone.
- **2-tone paging decode.** Each channel can be programmed for 2-tone paging decode within a frequency range of 300-1500 Hz. Additional 2-tone paging features include Group Call, All Call, automatic reset, and transpond alert.
- **2-tone paging encode.** Each channel can be programmed for 2-tone paging encode within a frequency range of 300-1500 Hz.
- **DTMF ANI.** Each channel can be programmed to transmit a unique DTMF ANI string with the "Z" button programmed for DTMF ANI.
- **Wide or narrow band operation.** Each channel is programmable for wide or narrow band operation.
- **Squelch adjustment.** Squelch sensitivity can be programmed on a per channel basis to meet your specific needs.
- **Alert tones.** Each channel is programmable for a variety of alert tones that include RX courtesy beep, TX clear to talk beep, busy channel lockout alert, last active channel marker, and channel scanning indicator.

See your Ritron dealer or contact Ritron directly for PC programming of these option.

Built-in NOAA WEATHER RADIO *Feature*

- **Weather Channel.** VHF models can be programmed to receive your local NOAA weather radio broadcast. The Weather channel can be turned On and Off through Field programming.
- **Weather Alert.** VHF models can be programmed to alert you when the National Weather Service detects threatening weather conditions. The Weather Alert feature can be turned On and Off through Field programming.

Have questions? Call ***800-USA-1-USA*** (800-872-1872) or visit our website at ***www.ritron.com***

CONTROL & OPERATION

(1) *CHANNEL DISPLAY*

The channel display will indicate the current operating channel. When the Scan Channel is selected the display will rapidly flash the channels being scanned, and will stop when a channel is received. The channel display also indicates the volume level between 0-9 whenever a volume control is pressed.

(2) *CHANNEL SELECTOR*

Press the Channel Selector button and the radio will advance the channel. The Channel Beep will be heard any time Channel 1 is selected. When the Scan Channel is selected the radio will sound the Scan Beep and begin scanning.

(3) *AUDIO ACCESSORY JACK*

The audio accessory jack is used to plug in earphone options, and, in conjunction with the microphone jack, to connect an optional remote speaker/ microphone or a single- or dual-ear headset. This jack is also used for PC programming.

(4) *MICROPHONE JACK*

The microphone jack is used to connect optional external microphones and, in conjunction with the audio accessory jack, to connect an optional remote speaker/ microphone or a single- or dual-ear headset.

(5) *POWER CONNECTOR (TOP END OF CASE)*

The power connector on the top end of the radio is used to connect power to the unit, either an external 12 VDC supply or the RPS-1A cube power supply included with the radio.

(6) *SPEAKER*

The speaker allows you to hear calls on your channel.

(7) *ANTENNA*

The flexible antenna radiates and receives radio signals. The antenna connects to a BNC type connector located on the top end of the radio.

NOTE: The AFB-1545 antenna furnished with the radio will work with VHF and UHF radios.

(8) *"Z" BUTTON - PROGRAMMABLE SOFT KEY*

The Special Feature "Z" button can be PC programmed as a soft key for one of many unique functions. They are Scan, Weather Channel, send DTMF ANI, send 2-tone page, Monitor, send Call Tone.

(9) *VOLUME DOWN/ OFF*

Press the Volume Down/ Off button to decrease volume. The channel display will indicate the volume level as long as the Volume Down/ Off button is pressed. To switch Off the unit, press and hold this button until the speaker sounds a double beep.

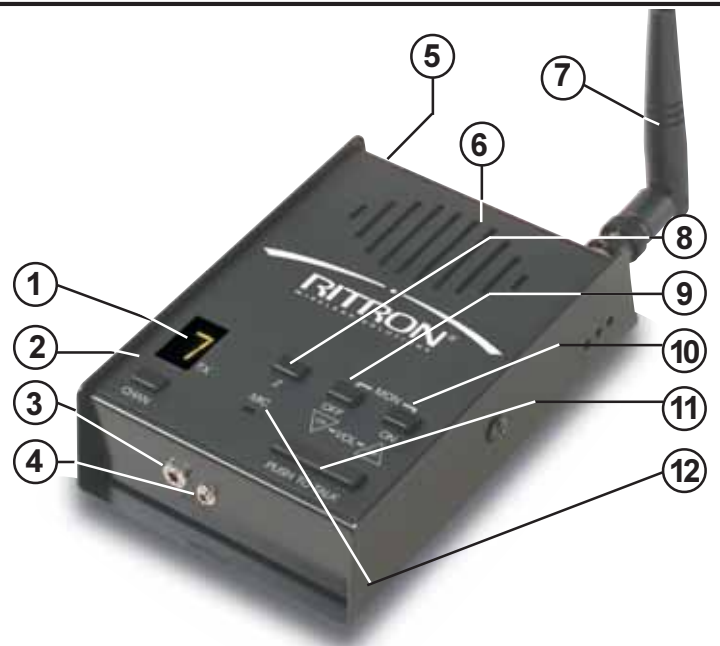


FIG-1: RADIO CONTROLS & CONNECTORS

(10) *ON/ VOLUME UP*

To switch the unit On, press the On/ Volume Up button; the speaker will sound the Channel Beep. If the radio turns on to the Scan Channel it will sound the Scan Beep. Once the radio is On, press this button to increase volume. The channel display will indicate the volume level as long as the On/ Volume Up button is pressed.

(11) *PUSH-TO-TALK SWITCH (PTT)*

Press and hold the PTT when transmitting; release it to receive.

(12) *MICROPHONE*

The microphone allows your voice to be heard in transmissions to other radios. Speak in a normal tone; shouting does not improve your listener's reception.

OPERATION

As long as the Volume Up button is held down the volume will increase and the display will indicate the volume level as a number between 0 and 9.

When the Volume Down button is held down the volume will decrease and the display will indicate the volume level as a number between 9 and 0.

FIG-2: VOLUME LEVEL INDICATOR

ON-OFF / VOLUME ADJUST

To turn on the radio - press the On/Volume Up button. The radio will sound the Channel Beep. If the radio turns on to the Scan Channel it will emit the Scan Beep. The radio will turn on to the channel that was selected when it was last turned off.

To adjust the volume - press the volume up or the volume down button until you reach the desired level. The display will show the volume level on a 0-9 scale as long as the volume button is pressed, and you will hear any received broadcasts on the channel.

To turn off the radio - press and hold the Off/Volume Down button until a two tone "turn-off" beep is heard. For instant turn-off, press the PTT button while holding the Off/Volume Down button.

CHANNEL SELECTION

To change channels - press and release the Channel Selector button. The radio will increment the channel, and the Channel Display will show the new operating channel. If the highest channel number is selected and you press the Channel Selector button, the radio resets to channel 1 and the Channel Beep is heard on the speaker.

If the Scan Channel is selected - the radio will sound the Scan Beep and the Channel Display will rapidly flash the channel numbers as they are scanned. If a signal is received the channel display will indicate the channel number, and when the received signal is removed the radio will wait briefly, sound the Scan Beep, then scanning will resume as normal.

If the Weather Channel is selected - on a VHF radio the display will light a single segment of the display that indicates which of the seven NOAA frequencies is monitored. See the "NOAA Weather Radio" section on page 7 for details.

RECEIVE

To hear calls from other users - adjust the volume as desired. The radio can receive broadcasts as long as the Push-To-Talk button is not pressed. Whether or not you hear these broadcasts depends upon the squelch settings.

There are four squelch modes that can be used in the "Display Series" base radio.

- **Carrier squelch** lets you hear all broadcasts on your channel strong enough for the radio to detect, and silences noise.
- **Tone squelch** uses one of the QC or DQC “tone squelch” formats available on the "Display Series" base radio. This allows you to screen out “on-channel” broadcasts that do not carry the correct code programmed for the radio.
- **2-tone paging** can be used in conjunction with either carrier or tone squelch to block out all calls except those sent specifically to your radio. When the unique 2-tone sequence programmed into the radio is decoded, the radio will emit a series of ring tones similar to a telephone.
- **No squelch** disables all squelch operation and noise will be heard on the speaker. This allows you to hear even the weakest broadcasts on your channel.

Once a squelch type has been selected by the user, all channels will operate in that mode. The "Display Series" radio will operate in tone squelch mode when it is 1st turned on.

QC AND DQC TONE CODES

Tone codes filter out static, noise and reduce unwanted "chatter" on radio channels. When you operate on a frequency with a tone code, you screen out most interference. This allows you to communicate with less interference and to hear only those users in your radio group.

IMPORTANT! All radios in the talk group must operate on the same frequency and tone code.

To activate carrier squelch - simultaneously press both of the volume buttons and hold briefly before releasing. When carrier squelch is on, the radio emits a “double beep.” The radio will now let you hear all broadcasts on your channel.

To activate tone squelch - simultaneously press both volume buttons and hold briefly before releasing. When tone squelch is turned on, the radio sounds one beep. You will only hear broadcasts that carry the same QC or DQC code programmed into your radio.

To activate no squelch - simultaneously press both of the volume buttons and continue to hold them down. About 3 seconds after the beep (or double beep), the radio will start beeping repeatedly. This means that squelch is turned off. Release the buttons. To restore squelch, press and hold both of the volume buttons until the radio sounds a beep or double beep.

If you are unable to activate carrier or no squelch the radio has been optionally programming for Monitor Lockout. See your Ritron dealer or contact Ritron directly to disable this option.

To activate 2-tone paging - simultaneously press both of the volume buttons and hold briefly before releasing. When 2-tone paging is turned on, the radio sounds a "triple beep". You will only hear broadcasts that first send your two unique paging tones. If you are unable to set the radio, you have selected a channel that is not programmed for 2-tone paging decode.

To monitor the channel - place the radio in carrier squelch mode.

Using the "Z" button for squelch - The "Display Series" base radio "Z" button can be programmed to set the squelch mode.

To use the "Z" button for Monitor see "How To Field Program Radio Options" on page 12.

Note: The beginning of a call might be missed if the radio is scanning or has been set for battery saver mode. If this happens, ask the caller to repeat the message.

TRANSMIT

Normally, you should monitor the channel before transmitting and talk only when the channel is clear.

To transmit - hold down the Push-To-Talk button and, with the radio at least 6 inches away, talk into the microphone. Speak in a normal tone, since talking louder will not improve the listener's reception.

Keep talk times as short and infrequent as possible to allow others to use the channel.

A Transmit / Busy Lamp in the lower right corner of the Channel Display lights whenever the transmitter is activated and blinks when the channel is busy.

FIG-3: TRANSMIT/BUSY LAMP

RADIO ALERT TONES

The radio responds to certain instructions by sounding a beep or series of tones. These tones can tell you that the radio is working as you expect.

Power On/Self Check "OK"

When it is first turned on, the radio runs a quick "self test" to confirm basic functions. When complete the radio will emit the Channel Beep and the Channel Display will show the operating channel. The radio is then ready to use.

Error Tones

However, if the "self test" detects a diagnostic error, an error tone sounds. The error tone indicates the radio frequency synthesizer is malfunctioning. Turn off the radio and try again. The error tone will also sound if a channel has been programmed for an invalid frequency.

A long, low-pitched tone means the battery voltage is too low to operate the radio. If you cannot correct the begin scanning.

Squelch Mode

When you press and hold both Volume buttons at the same time, a single beep will sound to indicate that tone squelch is on. A "double beep" means that carrier squelch is on. If the channel is programmed for 2-tone paging, a "triple beep" indicate that the pager has been reset.

Transmitter Time Out

A low tone followed by a higher-pitched tone sounds and the transmitter automatically shuts off if you hold down the PTT button longer than 60 seconds.

Battery Alert Tone

In battery powered installations: Once the battery voltage drops below the required "operating voltage" the radio emits a long, low tone and turns itself off.

OPTIONAL ALERT TONES

The "Display Series" base radio can be programmed using the RITRON PC Programmer for optional alert tones. See your Ritron dealer or contact Ritron directly for programming of these options.

Courtesy Beep

A short tone sounds at the end of each received transmission to indicate that the channel is clear and you may transmit.

Busy Channel TX Inhibit

If a user is transmitting on your radio frequency without your tone, you will not be allowed to transmit. The radio will beep a series of long, low tones while the PTT is held down (like a busy signal).

Transmit Clear To Talk Beep

A short tone sounds after the PTT has been pressed to indicate that the radio is ready for you to begin talking.

OPERATION

CHANNEL SCAN OPERATION

Channel scanning allows you to listen to broadcasts on your radio channels. The "Display-Series" base radio will scan all channels programmed into the radio except the NOAA Weather Channel.

How Scanning Works

Using the Channel Selector button, select the Scan channel. The radio sounds the Scan Beep, and then repeatedly checks each channel in the scan list. The channel display will show the channel numbers as they are scanned.

When receiving a call on a channel being scanned, the radio will stop scanning to let you hear communications on that channel. After the transmission has ended the radio will pause before it resumes scanning to allow you time to respond.

When transmitting from the Scan channel, the radio will go to the last channel on which a signal was received, then transmit. After you release the PTT the radio will pause to allow time for a response, and then resume scanning.

Temporary Busy Channel Blocking

If one of the channels in the scan list is so busy that you want to temporarily block it out, press the Channel Selector button while the radio is stopped on the channel to be blocked and hold it until scanning resumes. The blocked channel will now be skipped in the scan list.

The blocked channel will be returned to the scan list if the radio is turned off and then back on again, or when the radio channel is changed using the Channel Selector button. The 1st channel in the scan list cannot be blocked.

To turn Channel Scan on / off see "How To Field Program Radio Options" on page 12.

Last Channel Scanned Alert Tone

When changing channels with the Channel Selector button, an alert tone will sound to indicate the last channel that received a message when the radio was scanning. This will identify the channel on which the last message was received, and allow uninterrupted transmission on that channel without the constraints of scanning. You can then press the Channel Selector button to return to the scan channel.

Using The "Z" Button For Scan

The special feature "Z" button can be programmed to initiate scanning. PBS-446D and JBS-446D UHF base radios are programmed for "Z" button Scan channel operation from the factory.

To select the Scan Channel, press the "Z" button. The radio sounds the Scan Beep, and scanning operation is initiated. The Scan channel will not be accessible with the Channel Selector button when the radio is programmed for "Z" button Scan channel operation.

To return to normal channel operation, press the Channel Selector button and the radio will return to channel 1.

To temporarily block a busy channel while scanning, press the "Z" button while the radio is stopped on the channel to be blocked and hold it until scanning resumes. The blocked channel will now be skipped in the scan list.

Priority Scanning (Optional)

The "Display Series" base radio can be optionally programmed for priority scanning. Priority Scan allows you to periodically monitor a Priority Channel, even if the radio has stopped on another channel. This will prevent missed calls on the primary operating channel when in scan mode.

With Priority Scan enabled:

- The first channel in the scan list is the Priority Channel.
- The radio checks the Priority Channel every two seconds to check for activity. This time is programmable and can be set for 1 - 8 seconds.
- The radio can be programmed to transmit only on the Priority Channel when scanning.
- The radio can be programmed to sound a Priority Channel Beep whenever the radio receives on the Priority Channel when scanning.

See your Ritron dealer or contact Ritron directly for PC programming of this option.

2-TONE PAGING DECODE OPERATION

To use 2-tone paging decode the "Display Series" base radio must be PC programmed for this option, the radio does not operate with 2-tone decoding as it is received from the factory. See your Ritron dealer or contact Ritron directly for PC programming of this option.

To activate 2-tone paging you must first select a radio channel that has been PC programmed for 2-tone paging decode. The radio is normally programmed to automatically activate 2-tone decode any time the paging channel is selected. If not, simultaneously press both of the volume buttons and hold briefly before releasing. The radio sounds three beeps when 2-tone paging is turned on.

If you are unable to set the radio, you have selected a channel that is not programmed for 2-tone paging decode.

When receiving a 2-tone page the radio will emit a "ring" tone similar to a telephone and the display will show a "C" to indicate that a call has been received. You can now proceed with normal two way communication until 2-tone paging has been reset. The "ring" tone will sound every time a 2-tone page is decoded.

The display will show a "C" to indicate that a 2-tone call has been received.

FIG-4: 2-TONE CALL ALERT

To reset 2-tone paging after receiving a call, simultaneously press both of the volume buttons and hold briefly before releasing. The radio sounds three beeps when 2-tone paging is reset and the display will show the channel number. The radio can be optionally programmed to automatically reset if a call is not answered within 15 seconds.

2-tone paging channels can be programmed to:

- Automatically set the radio for 2-tone paging mode whenever the channel is selected.
- Automatically reset if a 2-tone page is not answered within 15 seconds.
- Automatically place the receiver into carrier squelch "monitor" mode whenever a 2-tone page has been decoded.
- Transmit a transpond tone to let the paging station know that the page has been received.
- Decode an All Call tone.
- Decode a Group Call if the 1st tone is sent for an extended period of time.

"Z" BUTTON - PROGRAMMABLE SOFT KEY

The "Display-Series" base radio "Z" button can be programmed for any one of the following options to provide unique operation. Refer to the PC programmer HELP file for specific "Z" button programming instructions.

To field program the "Z" button for the Scan, Weather, Monitor, or Call Tone option see "How To Field Program Radio Options" on page 12.

SCAN

Both the PBS-446D and JBS-446D UHF base radios are programmed for "Z" button Channel Scan operation from the factory.

See "Using The "Z" Button For Scan" on page 5.

WEATHER

Both the PBS-146D and JBS-146D VHF base radios are programmed for "Z" button Weather channel operation from the factory. This option is only available on VHF band radios.

See "Using The "Z" Button For Weather Channel" on page 8.

MONITOR

The "Z" button places the radio into one of the four squelch modes when pressed.

Carrier squelch is enabled when the radio emits a “double beep.” The radio will now let you hear all broadcasts on your channel.

Tone squelch is enabled when the radio sounds one beep. You will only hear broadcasts that carry the same QC or DQC code programmed into your radio.

2-tone paging is enabled when the radio sounds a "triple beep". You will only hear broadcasts that first send your two unique paging tone. If you are unable to set the radio for the "triple beep", you have selected a channel that is not programmed for 2-tone paging decode.

No squelch is enabled by pressing the "Z" button and continuing to hold it down until the radio starts beeping repeatedly. This means that squelch is turned off. Release the button.

If you are unable to activate carrier or no squelch the radio has been optionally programming for Monitor Lockout. See your Ritron dealer or contact Ritron directly to disable this option.

CALL TONE

Pressing the "Z" button causes the radio to transmit a Call tone on the channel currently selected. If you continue to hold the "Z" button down, the transmitter will remain active and voice communications will be possible after the Call tone has been sent.

This is used when the receiving radio is in a high noise environment and may not hear a voice transmission.

DTMF ANI ON TRANSMIT

Pressing the "Z" button causes the radio to transmits a unique DTMF ANI string that can be programmed seperately for each channel. The DTMF string will be heard on the speaker, and if you continue to hold the "Z" button down, the transmitter will remain active and voice communications will be possible after the DTMF ANI string has been sent.

OPERATION

Use the PTT button to transmit messages without the DTMF ANI.

If a channel is not programmed with a DTMF ANI string the "Z" button will function as a PTT button.

2-TONE PAGING ENCODE

Pressing the "Z" button causes the radio to transmits a unique 2-tone page that can be programmed seperately for each channel. The 2-tone page will be heard on the speaker, and if you continue to hold the "Z" button down, the transmitter will remain active and voice communications will be possible after the 2-tone page has been sent.

Use the PTT button to transmit messages without the 2-tone page.

If a channel is not programmed to encode a 2-tone paging signal the "Z" button will function as a PTT button.

NOAA WEATHER RADIO

Built-in NOAA WEATHER RADIO Feature

NOAA Weather Radio (NWR) is a nationwide network of radio stations broadcasting continuous weather information direct from a nearby National Weather Service office. NWR broadcasts National Weather Service warnings, watches, forecasts and other hazard information 24 hours a day.

Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "all hazards" radio network, making it your single source for comprehensive weather and emergency information. NWR also broadcasts warning and post-event information for all types of hazards—both natural (such as earthquakes and volcano activity) and environmetal (such as chemical releases or oil spills).

Known as the "Voice of the National Weather Service," NWR is provided as a public service by the National Oceanic & Atmospheric Administration (NOAA), part of the Department of Commerce. NWR includes more than 750 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Broadcasts are found in the public service band at these seven frequencies (MHz): 162.400, 162.425, 162.450, 162.475, 162.500, 162.525, 162.550.

HOW TO PRESET YOUR RADIO FOR LOCAL NOAA WEATHER BROADCASTS

(VHF MODELS ONLY)

VHF models of the "Display Series" base radio can hear weather forecasts from the National Weather Service which are broadcast on **one of the seven** NOAA weather frequencies. *In some areas you may be able to receive more than one broadcast.*

The radio is shipped from the factory without a NOAA frequency selected. Before using any of the NOAA weather features on your VHF radio you must first select the local NOAA frequency.

1. Follow the steps in FIG-5 at right to place the radio into the Weather Frequency Select mode.
2. The radio will scan to the 1st NOAA frequency where a broadcast is present. The display will light a single segment to indicate the NOAA frequency per FIG-6.
3. Monitor the channel for a few minutes to be sure it is the broadcast for your local area.
4. Press the "Z" button to scan for the presence of any other NOAA broadcasts, monitoring each broadcast and noting the frequency as indicated by the display.
5. Using the "Z" button, select the local NOAA frequency you would like your radio to operate on.
6. Turn the radio off by pressing the Volume Down/Off button.
7. When the radio is turned back on all weather features will operate on the selected NOAA frequency.

NOTE: If you move to another location within your area, or to another state, you must "re-train" your radio with the local NOAA frequency.

Have questions? Call ***800-USA-1-USA*** (800-872-1872) or visit our website at ***www.ritron.com***

NOAA WEATHER RADIO

1. PRESS & HOLD UNTIL THE "RADIO OFF" TONES ARE HEARD, THEN RELEASE.
3. PRESS & RELEASE - THE RADIO WILL START BEEPING.
4. CONTINUE HOLDING THE "Z" BUTTON UNTIL THE BEEPING STOPS, THEN RELEASE IT & LISTEN.
5. TO FIND THE NEXT ACTIVE WEATHER CHANNEL, PRESS & RELEASE THE "Z" BUTTON.
2. PRESS & HOLD THE "Z" BUTTON.
RITRON

FIG-5: PRESETTING YOUR LOCAL NOAA WEATHER BROADCASTS

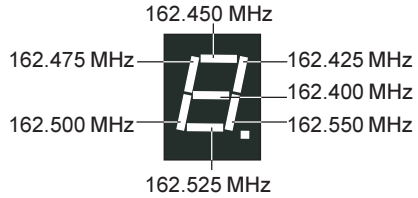


FIG-6: NOAA FREQUENCIES

NOAA WEATHER CHANNEL

Once a NOAA weather frequency has been selected on your VHF model radio, a channel is created for listening to National Weather Service broadcasts.

Press the Channel button to step through your radio channels. The NOAA Weather Channel will be after your last channel, and the display will light the segment representing the selected NOAA frequency.

If you do not desire a NOAA Weather Channel, it can be turned off through Field Programming.

To turn Weather Channel on / off see "How To Field Program Radio Options" on page 12.

WEATHER ALERT

Once a NOAA weather frequency has been selected on your VHF model radio it will listen for emergency broadcasts from the National Weather Service, regardless of which channel you are on.

An alert tone will sound in the speaker, the display will show an "A" (as shown), and the National Weather Service emergency broadcast will be heard - advising you of threatening weather conditions. Pressing the Channel button will return you to your normal operating channel.

If you do not desire Weather Alert, it can be turned off through Field Programming.

To turn Weather Alert on / off see "How To Field Program Radio Options" on page 12.

USING THE "Z" BUTTON FOR WEATHER CHANNEL

Both the PBS-146D and JBS-146D VHF base radios are programmed for "Z" button Weather Channel operation from the factory. This option is only available on VHF band radios.

To select the Weather channel, press the "Z" button. The radio will scan to the 1st NOAA frequency where a broadcast is present. The display will light a single segment to indicate the NOAA frequency per FIG-6 on page 7. If the radio has been pre-set for your local NOAA weather frequency, the radio will go directly to that frequency when the "Z" button is 1st pressed.

With any subsequent press of the "Z" button the radio will scan to the next active NOAA frequency.

The Weather channel will not be accessible with the Channel Selector button when the radio is programmed for "Z" button Weather channel operation.

To return to normal channel operation, press the Channel Selector button and the radio will return to the channel that was selected when the Weather channel was accessed with the "Z" button.

RADIO PROGRAMMING

IMPORTANT

To talk to other users in your group, all radios must be set to the same frequency and Interference Eliminator codes.

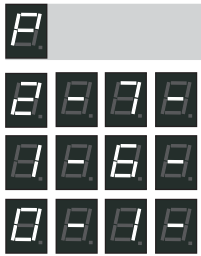
1. PRESS & HOLD UNTIL THE "RADIO OFF" TONES ARE HEARD, THEN RELEASE.
3. PRESS & RELEASE - THE RADIO WILL START BEEPING RAPIDLY.
2. PRESS & HOLD THE PUSH-TO-TALK BUTTON.
4. CONTINUE HOLDING THE PUSH-TO-TALK BUTTON UNTIL THE BEEPING STOPS, THEN RELEASE IT.
5. THE RADIO WILL EMIT A TRIPLE TONE: IT IS NOW IN PROGRAM/ READOUT MODE.

FIG-7: HOW TO PLACE THE RADIO IN PROGRAM/READOUT MODE

HOW TO READOUT FIELD PROGRAMMABLE FREQUENCY & TONE CODES

In our example channel 3 of a UHF radio is programmed to operate on the "Brown Dot" frequency of 464.500 MHz (Frequency code "04") with 100.0 Hz tone (Tone code "12").

RADIO IDENTIFICATION



CHANNEL

FREQUENCY & TONE CODES

1. Place the radio into Program/ Readout Mode by following the instructions in FIG-7 at left. A "**P**" will appear on the LED display as you enter program mode.
2. Release the Push-to-talk button after the beeping has stopped. The radio will display a series of six characters for Radio Identification, with each character separated by a hyphen. The 1st two characters indicate the model number, the 3rd and 4th characters indicate the radio type, and the 5th and 6th characters indicate the firmware revision.

   In this example: Model: 27
   Radio Type: 16
   Firmware Revision: 01

   NOTE: Radio models wih firmware revisions prior to 16.01 do not display the Radio Identification sequence.
3. After the Radio Identification has been displayed the digit 1 will appear, followed by a hyphen, and the radio will emit a triple beep indicating that the radio is in program mode and channel 1 is selected.
4. Press the Channel Selector button to select the channel to be read out. The channel number will appear briefly on the display as you step through the channels. When you have settled on a channel a hyphen will appear across the center of the display to indicate that it is ready for readout..
5. Press and release the On/ Volume Up button. The radio will begin to display a series of four digits; with each digit seperated by a hyphen.

   The 1st and 2nd digits indicate the frequency code; **see Table 1 on page 11.**

   The 3rd and 4th digits indicate the tone code; **see Table 2 on page 12.**

   If a 5th digit is diplayed, the channel has been programmed for DQC and the last three digits indicate the DQC code; **see Table 3 on page 12.**
6. If the channel is PC-programmed for any frequency not listed in Table 1 on page 11, an error tone will sound and an "E" will appear on the display.
7. To readout another channel, repeat steps 4 through 6.
8. Turn the radio OFF and then ON again—the radio is now ready to use.

Have questions? Call ***800-USA-1-USA*** (800-872-1872) or visit our website at ***www.ritron.com***

RADIO PROGRAMMING

HOW TO FIELD PROGRAM FREQUENCY & TONE CODES

To match other radios, the owner can select Frequency and Tone Codes from **Tables 1, 2, and 3 on pages 11 and 12.**

In our example we will program channel 3 of a UHF radio to operate on the "Brown Dot" frequency of 464.500 MHz (Frequency code "04") with 100.0 Hz tone (Tone code "12").

04

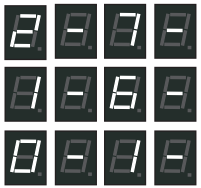
1. Refer to Table 1 on page 11 to determine the two digit frequency code and write it down.

12

2. Refer to Table 2 on page 12 to determine the two digit tone code for 100.0 Hz and write it down.

3. Place the radio into Program/ Readout Mode by following the instructions in FIG-7 on page 9. A "**P**" will appear on the LED display as you enter program mode.

RADIO IDENTIFICATION



4. Release the Push-to-talk button after the beeping has stopped. The radio will display a series of six characters for Radio Identification, with each character separated by a hyphen. The 1st two characters indicate the model number, the 3rd and 4th charaters indicate the radio type, and the 5th and 6th characters indicate the firmware revision.

In this example:		
	Model:	27
	Radio Type:	16
	Firmware Revision:	01

NOTE: Radio models with firmware revisions prior to 16.01 do not display the Radio Identification sequience.

SELECT CHANNEL

5. After the Radio Identification has been displayed the digit 1 will appear, followed by a hyphen, and the radio will emit a triple beep indicating that the radio is in program mode and channel 1 is selected.

6. Press the Channel Selector button to select the channel to be programmed. The channel number will show briefly on the channel display as you step through the channels. When you have settled on a channel the display will show a hyphen to indicate that it is ready for programming.

FREQUENCY CODE

7. Enter the 1st digit of the frequency code by clicking the PTT button until the channel display shows the desired number. Pause - the radio will sound a low tone and show a hyphen across the center of the display to indicated that it is ready to accept the next digit.

8. Enter the 2nd digit of the frequency code by clicking the PTT button until the channel display shows the desired number. Pause - the radio will sound a low tone and show a hyphen across the center of the display to indicated that it is ready to accept the next digit.

TONE CODE

9. Enter the 1st digit of the tone code (or 1st digit of the DQC code) by clicking the PTT button until the channel display shows the desired number. Pause - the radio will sound a low tone and show a hyphen on the display to indicated that it is ready to accept the next digit.

10. Enter the 2nd digit of the tone code (or 2nd digit of the DQC code) by clicking the PTT button until the channel display shows the desired number. Pause - the radio will sound a low tone and show a hyphen on the display to indicated that it is ready to accept the next digit.

11. **FOR DQC CODES ONLY** - Enter the 3rd digit of the DQC code by clicking the PTT button until the channel display shows the desired number. Pause - the radio will sound a low tone and show a hyphen on the display to indicate that it is ready to accept the next digit.

12. Press and release the On/ Volume Up to **SAVE** your programming entry. The LED display will briefly show the channel number you have just programmed and the radio will sound a triple beep to indicate that programming was successful.

NOTE: An error tone will sound if you attempt to save an incorrect code and an "E" will appear on the display. Turn the radio OFF, check the digits you are attempting to enter, then start over.

13. To program another channel, repeat steps 6 through 12.

14. Turn the radio OFF and then ON again—the radio is now ready to use.

NOTES:

a. **YOU MUST** enter "44" to enter "No Code" interference eliminator to match radios not having tone codes. Refer to Table 2 on page 12.

b. If the radio does not sound a confirming triple tone when you attempt to enter Program/ Readout Mode, the radio was factory or dealer customized to disable programming. Consult the radio owner or your dealer.

RADIO PROGRAMMING

TABLE 1: PROGRAMMABLE FREQUENCY CODES

VHF MURS **			
Code No.	MHz	Color Dot	Band Width
01	154.6000	Green Dot	25
02	154.5700	Blue Dot	25
19	151.8200	MURS	12.5
20	151.8800	MURS	12.5
21	151.9400	MURS	12.5
22	154.6000	MURS/Green	12.5
23	154.5700	MURS/Blue	12.5
00	**DELETE Code***		

VHF Business Band			
Code No.	MHz	Color Dot	Band Width
03	151.6250	Red Dot	25
04	151.9550	Purple Dot	25
05	151.9250		25
06	154.5400		25
07	154.5150		25
08	154.6550		25
09	151.6850		25
10	151.7150		25
11	151.7750		25
12	151.8050		25
13	151.8350		25
14	151.8950		25
15	154.4900		25
16	151.6550		25
17	151.7450		25
18	151.8650		25
24	151.7000		12.5
25	151.7600		12.5
26	152.7000		25
00	**DELETE Code***		

UHF Business Band			
Code No.	MHz	Color Dot	Band Width
01	467.7625	J	25
02	467.8125	K	25
03	464.5500	Yellow Dot	25
04	464.5000	Brown Dot	25
05	467.8500	Silver Star	25
06	467.8750	Gold Star	25
07	467.9000	Red Star	25
08	467.9250	Blue Star	25
09	469.2625		25
10	462.5750	White Dot	25
11	462.6250	Black Dot	25
12	462.6750	Orange Dot	25
13	464.3250		25
14	464.8250		25
15	469.5000		25
16	469.5500		25
17	463.2625		25
18	464.9125		25
19	464.6000		25
20	464.7000		25
21	462.7250		25
22	464.5000	Brown Dot	12.5
23	464.5500	Yellow Dot	12.5
24	467.7625	J	12.5
25	467.8125	K	12.5
26	467.8500	Silver Star	12.5

UHF Business Band			
Code No.	MHz	Color Dot	Band Width
27	467.8750	Gold Star	12.5
28	467.9000	Red Star	12.5
29	467.9250	Blue Star	12.5
30	461.0375		12.5
31	461.0625		12.5
32	461.0875		12.5
33	461.1125		12.5
34	461.1375		12.5
35	461.1625		12.5
36	461.1875		12.5
37	461.2125		12.5
38	461.2375		12.5
39	461.2625		12.5
40	461.2875		12.5
41	461.3125		12.5
42	461.3375		12.5
43	461.3625		12.5
44	462.7625		12.5
45	462.7875		12.5
46	462.8125		12.5
47	462.8375		12.5
48	462.8625		12.5
49	462.8875		12.5
50	462.9125		12.5
51	464.4875		12.5
52	464.5125		12.5

UHF Business Band			
Code No.	MHz	Color Dot	Band Width
53	464.5375		12.5
54	464.5625		12.5
55	466.0375		12.5
56	466.0625		12.5
57	466.0875		12.5
58	466.1125		12.5
59	466.1375		12.5
60	466.1625		12.5
61	466.1875		12.5
62	466.2125		12.5
63	466.2375		12.5
64	466.2625		12.5
65	466.2875		12.5
66	466.3125		12.5
67	466.3375		12.5
68	466.3625		12.5
69	467.7875		12.5
70	467.8375		12.5
71	467.8625		12.5
72	467.8875		12.5
73	467.9125		12.5
74	469.4875		12.5
75	469.5125		12.5
76	469.5375		12.5
77	469.5625		12.5
00	**DELETE Code***		

Per FCC rules and regulations, a given radio must not be programmed to contain a mix of both VHF Business Band and VHF MURS frequencies.

* *2-digit Frequency placeholder code* **(**Refer to **"How to Delete a Channel"** on page 12**)**

** **MURS frequencies -** *The 5 MURS frequencies **do not require** an FCC license. All other frequencies **require** an FCC license. See page 15 for license information.*

RADIO PROGRAMMING

TABLE 2: INTERFERENCE ELIMINATOR PROGRAMMABLE QC TONE

Code No.	Hz	Code No.	Hz	Code No.	Hz
01	67.0	18	123.0	35	225.7
02	71.9	19	127.3	36	233.6
03	74.4	20	131.8	37	241.8
04	77.0	21	136.5	38	250.3
05	79.7	22	141.3	39	69.4
06	82.5	23	146.2	40	159.8
07	85.4	24	151.4	41	165.5
08	88.5	25	156.7	42	171.3
09	91.5	26	162.2	43	177.3
10	94.8	27	167.9	**44**	**No Tone**
11	97.4	28	173.8	45	183.5
12	100.0	29	179.9	46	189.9
13	103.5	30	186.2	47	196.6
14	107.2	31	192.8	48	199.5
15	110.9	32	203.5	49	206.5
16	114.8	33	210.7	50	229.1
17	118.8	34	218.1	51	254.1
00	**Delete**				

TABLE 3: DIGITAL INTERFERENCE ELIMINATOR PROGRAMMABLE DQC CODES

Code Numbers						
023	073	156	261	365	503	654
025	074	162	263	371	506	662
026	114	165	265	411	516	664
031	115	172	271	412	532	703
032	116	174	306	413	546	712
043	125	205	311	423	565	723
047	131	223	315	431	606	731
051	132	226	331	432	612	732
054	134	243	343	445	624	734
065	143	244	346	464	627	743
071	152	245	351	465	631	754
072	155	251	364	466	632	

HOW TO FIELD PROGRAM RADIO OPTIONS

1. Follow the instructions in FIG-7 on page 9 to place the radio in the Program/ Readout Mode.
2. Using the PTT (push-to-talk) button and the LED display, enter the single digit code from Table 4 below for the option to be programmed.
3. Pause—the display will change and show a hyphen, you will also hear a short low tone.
4. Press and release the On/ Volume Up to **SAVE** your programming entry. The radio will sound a triple beep to indicate that programming was successful.
5. Turn the radio OFF and then ON again—the radio is now ready to use.

TABLE 4: RADIO OPTION CODES

CODE	OPTION
1	Turn channel scan on
2	Turn channel scan off
3	Turn weather channel on
4	Turn weather channel off
5	Turn weather alert on
6	Turn weather alert off
7	Assign SCAN option to Z Button
8	Assign WEATHER option to Z Button
9	Assign MONITOR option to Z Button
0	Assign CALL TONE option to Z Button

NOTES:
1. Codes 1 & 2 have no effect if Option 7 is selected
2. Codes 3 & 4 have no effect if Option 8 is selected
3. Code 0 is entered by pressing the PTT 10 times

HOW TO DELETE A CHANNEL

Following the instructions in "How to Field Program Frequency & Tone Codes" on page 10, enter a Frequency Code of "00" and a Tone Code of "00". Once a channel has been deleted it is no longer available with the Channel Selector.

A deleted channel can be added back at any time. To add a deleted channel back, follow the instructions in "How to Field Program Frequency & Tone Codes" on page 10.

PC PROGRAMMABLE FEATURES

The "Display Series" base radio has many features that are only available through PC programming. See your Ritron dealer or contact Ritron directly for PC programming of these option.

Receive and Transmit Frequency on any channel can be programmed to any valid frequency within it's designated band. (See "Display Series Model Numbers" for frequency bands)

Squelch Tightener on any channel can adjust carrier squelch UP to block distant signals or DOWN to hear more distant signals.

Wide or Narrow Band on any channel.

Monitor Lock Out can be set on any channel to prevent monitoring of the channel, only broadcasts with the correct QC or DQC code can be heard.

Transmit Inhibit on Busy Channel can be set on any channel to prevent transmitting when a broadcast is present on the receiver that does not carry the correct code. This feature is usually used in conjunction with Monitor Lock Out.

Transmit Time Out time can be changed.

Power Saver "sleep" time can be set, or power saver can be disabled.

PROGRAMMING

Courtesy Beep sounds a short tone at the end of each received transmission to indicate that the channel is clear and you may transmit.

Transmit Clear To Talk Beep Any channel can be set to sound a short tone after the PTT has been pressed to indicate that the radio is ready for you to begin talking.

Disable Field Programming to allow only PC programming.

Channel Scan can be programmed or edited to include any of the radio channels, even channels that are not selected with the Channel Selector button. Other programmable scan features include scan resume delay time, busy channel blocking, last active channel beeps, and priority scanning options.

2-Tone Paging Decode can be set on any channel. Programmable options include the setting of the 2 tone frequencies and duration, all call, group call, call transpond, automatic setting of 2-tone decode when the channel is selected, automatic reset of the 2-tone decode if a call is not answered within 15 seconds, and automatically set the radio to carrier squelch mode after a 2-tone page is received.

2-Tone Paging Encode can be programmed on any channel to be sent by pressing the Z button.

DTMF ANI can be programmed on any channel to be sent by pressing the Z button.

!! CAUTIONS — ALL RADIOS !!

OBSERVE CAUTION IN THE FOLLOWING ENVIRONMENTS TO MAXIMIZE THE LIFE OF YOUR RADIO EQUIPMENT:

LOCATION: Be aware that this radio and/or antenna may create interference with, or be interfered with, by nearby electronic equipment such as computers, monitors, keyboards, electronic telephones and other sensitive devices. Either move the equipment or use a remote antenna to separate components sufficiently to stop or reduce interference.

MOISTURE: "Display Series" base radios are not waterproof. DO NOT directly expose them to rain or excessive moisture.

CHEMICALS: Detergents, alcohol, aerosol sprays or petroleum products can damage the radio case. DO NOT use petroleum solvents of any kind; use a soft cloth moistened with water to clean the case.

EXTREME HEAT: High temperatures can damage the radio and its components. DO NOT expose the units to extreme heat or leave them in direct sunlight.

EXCESSIVE TRANSMISSIONS: DO NOT hold the Push-To-Talk switch down longer than necessary during transmission intervals.

VIBRATION/ SHOCK: Although your "Display Series" base radio is designed to be rugged, it will not survive excessive abuse. Avoid dropping the radio.

EXPOSURE TO RADIO FREQUENCY ENERGY:

These product generates radio frequency (RF) energy when the PTT button on the front of the unit is depressed. The product has been evaluated for compliance with the maximum permissible exposure limits for RF energy at the maximum power rating of the unit when using antennas available from RITRON. Antennas other than the those mentioned below have not been tested for compliance and may or may not meet the exposure limits at the distances given. Higher gain antennas are capable of generating higher fields in the strongest part of their field and would, therefore, require a greater separation from the antenna.

JBS-/PBS-146D: To comply with the General Population/Uncontrolled limits, all persons must be at least 7.9 inches (20 cm) from the AFB-1545 antenna which is supplied by RITRON to be attached directly to the rear of the unit. For the RITRON RAM-1545 magnet mount antenna which can be located away from the unit, all persons must remain at least 10.8 inches (28 cm) from the antenna.

JBS-/PBS-446D: To comply with the General Population/Uncontrolled limits, all persons must be at least 8.7 inches (22 cm) from the AFB-1545 antenna which is supplied by RITRON to be attached directly to the rear of the unit. For the RITRON RAM-1545 magnet mount antenna, at the 20 cm (7.9 inches) minimum expected separation distance and greater, the maximum RF exposure is well below the General Population/Uncontrolled limits. This product is not to be used by the general public in an uncontrolled environment unless compliance with the Uncontrolled/ General Population limits for RF exposure can be assured.

To limit exposure to RF energy to levels below the limit, please observe the following:

- Use only the antenna(s) available from RITRON for these models. **DO NOT** operate the radio without an antenna.
- Keep talk times as short and infrequent as possible. **DO NOT** depress the PTT button when not actually wishing to transmit. These radios are equipped with an internal timer to limit continuous transmit times.
- When transmitting, make certain that the distance limits for the particular model in use are observed.
- **DO NOT** allow children to operate the radio.

TROUBLESHOOTING

NOTES

1. • Reception can often be improved if you relocate by a short distance. This effect is more noticeable inside buildings.
   • The range of the "Display Series" base radio is approximately two miles, line-of-sight.
2. If your radio does not detect calls from other radios on the channel, turn off Quiet Call by pressing and holding both volume buttons at the same time—a double beep indicates Quiet Call is off.
3. • Without use of a repeater: To hear a call, select a channel programmed to receive the caller's transmit frequency. To call another unit, select a channel programmed to transmit the other radio's receive frequency.
   • Using a repeater: A radio channel can hold two separate operating frequencies, one for receive and one for transmit. Your channel must work with the repeater's transmit and receive frequencies.
   • NOTE: A dealer must program the radio for repeater operation.
4. • An optional RM-7 Remote Speaker/ Microphone and headset, plus the CCL-M 12 VDC Adapter, allow operation in a vehicle. See page ii for accessories.
5. • To "talk" with each other, radios must be programmed identically for Quiet Call code, as well as frequency. Each code is unique; radios respond only to the code programmed.
   • Press and hold both volume buttons at the same time.
   A single beep indicates Quiet Call squelch is on.
   A double beep indicates Quiet Call squelch is off.

CHART

If you have trouble operating the base radio, review the Control & Operation, pages 2 through 7.
If you think the base radio is malfunctioning, check the list below.

Problem	Possible Solutions
	GENERAL
The radio does not work at all.	• Make sure the 120 VAC outlet is active and the RPS-1A power supply is connected.
Operating features do not work exactly as expected.	• The radio has been dealer programmed for customized operation. (Consult dealer.)
Reception is poor.	• Move to a different location. (See Note 1.) • Confirm the proper antenna is connected to the radio. • Use an optional high-gain antenna. See page ii, Optional Accessories.
You cannot hear calls from other radios.	• Turn off Quiet Call (coded) squelch. (See Note 2.) • Ensure radio receives the same frequency the caller transmits. (See Note 3.)
Your calls cannot be heard in other radios.	• Make sure that your radio transmits on the receive frequency of the radio(s) you want to call. (See Note 3.)
	ERROR TONES
An error tone sounds when the radio is first switched on.	• See "Error Tones" on page 4.
An error tone occurs while transmitting.	• Refer to "Transmitter Time-Out," page 4.
	QUIET CALL
You cannot screen out calls from users outside of your Quiet Call group.	• Make sure that the channel is programmed with Quiet Call. • Activate coded squelch. (See Note 5.)
You cannot hear Quiet Call messages while in Quiet Call (coded) squelch.	• Confirm that the channel is programmed to detect the same code as the calling radio(s) transmits. (See Note 5.)
Others in your Quiet Call group cannot hear your Quiet Call messages.	• Verify that you transmit the same code as the radio(s) you call are programmed to detect. (See Note 5.)
	SCAN
The radio constantly stops on a busy channel, preventing you from hearing calls on other channels.	• Skip over the interfering channel when scanning. See "Temporary Busy Channel Blocking" on page 5.

FCC LICENSE REQUIRED

FCC REGULATIONS

LICENSING —

The FCC requires the owners of the radios to obtain a station license before using them.

The station licensee is responsible for ensuring that transmitter power, frequency and deviation are within the limits specified by the station license. The station licensee is also responsible for proper operation and maintenance of the radio equipment. This includes checking the transmitter frequency and deviation periodically, using appropriate methods.

To get a FCC license for VHF or UHF frequencies, submit FCC application Form 600 as indicated in the block at right. Your Ritron dealer can help you with this process.

SAFETY STANDARDS —

The FCC (with its action in General Docket 79-144, March 13, 1985) has adopted a safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated equipment. Ritron observes these guidelines and recommends that you do also:

- DO NOT hold the radio so that the antenna is very close to or touching exposed parts of the body, especially the face or eyes, while transmitting. Keep the radio vertical, four inches away while talking into the front panel.
- DO NOT press the Push-To-Talk except when you intend to transmit.
- DO NOT operate radio equipment near electrical blasting caps or in an explosive atmosphere.
- DO NOT allow children to play with any radio equipment that contains a transmitting device.
- Repair of Ritron products should be performed only by Ritron authorized personnel.

SERVICE

Federal law prohibits you from making any internal adjustments to the transmitter, and/ or from changing transmit frequencies unless you are specifically designated by the licensee.

If your radio equipment fails to operate properly, or you wish to have the radio programmed, contact your authorized dealer or Ritron.

RITRON, INC., Repair Department
505 West Carmel Drive
Carmel, IN 46032 USA

Phone: 317-846-1201
FAX: 317-846-4978

HOW TO OBTAIN AN FCC RADIO LICENSE

Federal Communications Commission (FCC) Licensing Information

Because your Ritron radio operates on Private Land Mobile frequencies, it is subject to the Rules and Regulations of the FCC, which requires all operators of these frequencies to obtain a station license before operating their equipment. Make application for your FCC license on FCC Forms 600 and 159.

*To have forms and instructions faxed to you by the FCC, call the **FCC Fax-On-Demand** system at*
202-418-0177 *from your fax machine; request Document 000600 & Form 159.*

*To have Document 000600 & Form 159 mailed to you, call the **FCC Forms Hotline** at*
800-418-FORM (800-418-3676).

*For **help with questions** concerning the license application, contact the FCC at*
888-CALL-FCC (888-225-5322).

*You must decide which radio frequency(ies) you can operate on before filling out your application. For **help determining your frequencies**, call Ritron at*
800-USA-1-USA (800-872-1872).

RITRON, INC. LIMITED WARRANTY

WHAT THIS WARRANTY COVERS

RITRON, INC. ("RITRON") provides the following warranty against defects in materials and/or workmanship in **RITRON Radios and Accessories** under normal use and service during the applicable warranty period (as stated below). "Accessories" means antennas, holsters, chargers, earphones, speaker/microphones and items contained in the programming and programming/service kits.

WHAT IS COVERED	FOR HOW LONG	WHAT RITRON WILL DO
"Display Series" Base Station Radios	1 year *	During the first year after date of purchase, RITRON will repair or replace the defective product, at RITRON's option, parts and labor included at no charge.
Accessories	90 days *	* *After date of purchase*

WHAT THIS WARRANTY DOES NOT COVER:

- Any technical information provided with the covered product or any other RITRON products;
- Installation, maintenance or service of the product, unless this is covered by a separate written agreement with RITRON;
- Any products not furnished by RITRON which are attached or used with the covered product, or defects or damage from the use of the covered product with equipment that is not covered (such as defects or damage from the charging or use of batteries other than with covered product);
- Defects or damage, including broken antennas, resulting from:
  - misuse, abuse, improper maintenance, alteration, modification, neglect, accident or act of God,
  - the use of covered products other than in normal and customary manner or,
  - improper testing or installation;
- Defects or damages from unauthorized disassembly, repair or modification, or where unauthorized disassembly, repair or modification prevents inspection and testing necessary to validate warranty claims;
- Defects or damages in which the serial number has been removed, altered or defaced.
- Batteries if any of the seals are not intact.

WHO IS COVERED BY THIS WARRANTY

This warranty is given only to the purchaser or lessee of covered products when acquired for use, not resale. This warranty is not assignable or transferable.

IMPORTANT

This warranty sets forth the full extent of RITRON's express responsibilities regarding the covered products, and is given in lieu of all other express warranties. What RITRON has agreed to do at left is your sole and exclusive remedy. No person is authorized to make any other warranty to you on behalf of RITRON. Warranties implied by state law, such as implied warranties of merchantability and fitness for a particular purpose, are limited to the duration of this limited warranty as it applies to the covered product. Incidental and consequential damages are not recoverable under this warranty (this includes loss of use or time, inconvenience, business interruption, commercial loss, lost profits or savings). **Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitation on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. Because each covered product system is unique, RITRON disclaims liability for range, coverage, or operation of the system as a whole under this warranty.**

HOW TO GET WARRANTY SERVICE

To receive warranty service, you MUST deliver or send the defective product, delivery costs and insurance prepaid, within the applicable warranty period, to RITRON, INC., 505 West Carmel Drive, Carmel, Indiana 46032, Attention: Warranty Department.

Please point out the nature of the defect in as much detail as you can. **You MUST retain your sales or lease receipt (or other written evidence of the date of purchase) and deliver it along with the product.** If RITRON chooses to repair or replace a defective product, RITRON may replace the product or any part or component with reconditioned product, parts or components. Replacements are covered for the balance of the original applicable warranty period. All replaced covered products, parts or components become RITRON's property.

RIGHTS TO SOFTWARE RETAINED

Title and all rights or licenses to patents, copyrights, trademarks and trade secrets in any RITRON software contained in covered products are and shall remain in RITRON. RITRON nevertheless grants you a limited non-exclusive, transferable right to use the RITRON software only in conjunction with covered products. No other license or right to the RITRON software is granted or permitted.

YOUR RIGHTS UNDER STATE LAW

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WHERE THIS WARRANTY IS VALID

This warranty is valid only within the United States, the District of Columbia and Puerto Rico.

Go Beyond Normal Limits...℠

RITRON®
WIRELESS SOLUTIONS

Designed to work as an integrated system or as an add-on to virtually any existing 2-way radio system

MADE IN THE USA

Display-Series
Patriot & Jobcom Portables

Quick Talk™ Voice Alert Reporter for Remote Monitoring of any sensor or switch

OutPost ™ XT
Ruggedized Two-Way Callbox

Quick Assist ® II
Push-Button RF Transmitter

Battery-operated callboxes provide instant wireless communication over existing two-way radio systems

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